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ABSTRACT

This report presents results of research conducted in conjunction with a Swedish project focused on the bilingual instruction of immigrant children. The main aim of the project was to construct a model for teaching children with a mother-tongue other than Swedish (in this case, Finnish) in a way that would provide them the same educational and developmental opportunities as Swedish children. The report discusses the teaching model used by the project for the first three years of comprehensive schooling and the effects the model had on the progress of the children. The teaching model used in the project combined in one class a group of Finnish pupils and a group of Swedish pupils. The immigrant pupils were taught by both a teacher speaking their mother-tongue and a Swedish teacher who also instructed the Swedish-speaking pupils. Four cohorts of Finnish immigrant children born in successive years between 1966 and 1969 participated in the project and the research. Cohorts were formed by offering free places in a bilingual preschool program. The original number of children in each cohort was between 11 and 15. Data, collected continuously from 1972 to 1979 for the four cohorts, consisted of Finnish and Swedish school and language proficiency tests, teachers' observations and ratings, intelligence tests, and interviews with parents. The results of several different comparisons of populations and explorations of relationships between variables are reported. (Author/RH)

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A BILINGUAL MODEL FOR THE TEACHING OF IMMIGRANT CHILDREN

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ABSTRACT

This presentation constitutes an extract from the final report from the project "The bilingual instruction of immigrant children" which was carried out at the Department of Education in Lund 1972-1980.

The main aim of the project was to construct a model for teaching children with a mother-tongue other than Swedish in a way that would provide them with the same educational and developmental opportunities as Swedish children.

Four groups of Finnish children were followed for 2 years in a Finnish-speaking pre-school and during the first 3 years in the comprehensive school. During these 3 years the Finnish children were given a bilingual program.

The data collected includes results of Swedish and Finnish language tests, ability tests, interviews with parents and observations by teachers.

The school achievement of the Finnish children, especially their language ability, is compared with the achievement level of other relevant groups of pupils. Factors influencing the school achievement and the developmental level of the Finnish children's language are analyzed.

Key words: Immigrant children, bilingual teaching, immigrant teaching, native language learning.

1. BACKGROUND AND AIMS

In Malmö, Sweden 1972-1980, Finnish immigrant children were provided with bilingual education within the framework of the project "Models for the bilingual instruction of immigrant children", during two preschool years and the first three years of the comprehensive school. During the period, four groups of Finnish children were followed up and studied with respect to school achievement, language development and general development.

This article discusses the teaching model used by the project for the first three years of the comprehensive school and the effects this model has had on the progress of the children.

1.1. The aims of the research project

The main aim of the project "Models for the bilingual instruction of immigrant children" was to devise a teaching model which would give immigrant children educational and developmental opportunities equivalent to those available to Swedish children.

If a child with a mother-tongue other than Swedish is to function in Swedish society, one of the most important prerequisites is to learn Swedish. However, for one reason or another, many children find learning a new language is a long drawn out process.

In the latter years, there has been an increasing awareness that to concentrate on teaching the immigrant child Swedish is not necessarily the best way to disperse his difficulties in a Swedish school. Many children appear to be able to speak everyday, idiomatic Swedish quite well, but they still do not have sufficient command of the language to follow teaching in a satisfactory manner. In this respect, the child's first years at school are vital ones. Unsatisfactory basic schooling may mean fewer possibilities of applying for further education at a later date.

A limited command of the language can also result in feelings of insecurity, which can be further accentuated if the child's background and experiences differ markedly from those of Swedish classmates. Lack of understanding and even negative attitudes may be experienced. For many immigrant children, the only way to be accepted by Swedish society is to learn Swedish as

quickly as possible, to imitate the behavior of the pace-setting Swedish pupils and to forget their own language and cultural background.

This can give rise to conflicts at home and result in identity crises. In all likelihood, neglect of the mother-tongue will result in a retardation of both intellectual and emotional development.

If immigrant children with a mother-tongue other than Swedish are to be given opportunities equal to those enjoyed by Swedish children, it is essential to create a teaching situation which directly aims at furthering bilingualism. By bilingualism, we mean not only the ability to speak two languages, but also the ability to participate in the cultures mediated by those languages.

In December 1978, according to the Central Bureau of Statistics, persons of foreign origin constituted about 9 % of the population in Sweden. Of these, 124 000 are foreign nationals, whereas 331 000 have assumed Swedish citizenship.

In the space of a few decades, Sweden has changed from a monolingual and ethnically homogenous country to a multilingual one with representatives of 150 nationalities.

When the project started in 1972, the National Board of Education issued a directive that the children must be ready to participate in a regular Swedish-speaking class by grade 4. At this point, they were assumed to have the same possibilities of acquiring linguistic and cognitive knowledge as their Swedish peers.

The aim of the project was as follows:

- to develop and strengthen the ability of immigrant children to use both their own language and Swedish so that they become functionally bilingual. By this we mean that a child with a mother-tongue other than Swedish is able to handle different Swedish language situations as well as a Swedish speaking child of similar capabilities. At the same time, these children should have such a good command of their mother-tongue that they can function well in environments where that language is spoken and also have the cultural potential to make the transition should they ever return to their own country.

- to develop a model and methods for organizing bilingual teaching for immigrant children in Swedish preschools and in the lower grades of the Swedish comprehensive school.
- to study and analyze bilingual learning with respect to the relations between the two languages, language development, school achievement and other important factors.

1.2. The goals of Swedish immigrant policy and minority group teaching

From the middle of the 1960's onwards, a widespread interest for the social situation of immigrants arose and efforts began to be made to integrate immigrants with the Swedish population. At first it was not clear if the aim should be to assimilate immigrants into Swedish society, expecting them to adopt both the Swedish language and culture, or if they should be integrated while at the same time preserving their linguistic, cultural and religious characteristics. In the light of this discussion and a demand for a clearly defined immigrant and minority group policy, the Commission on Immigration was appointed in 1978.

The final report of the Commission was published in 1974 (SOU 1974:69). In this report, three concepts are used to summarize the future goals of Swedish immigrant policy:

- Equality - the conditions of immigrant groups should be equivalent to those of the population in general.
- Freedom of choice - immigrants should be able to make their own decision as to what extent they wish to retain and develop their own cultural identity.
- Cooperation - there should be cooperation between the Swedish population and immigrants and immigrants should be given the possibility to aid in the making of decisions concerning their own situation in Sweden.

The most ambitious goal, also put forward as a proposal in the 1975 Parliament, was formulated within the framework of cultural policy. This proposal states that "all groups of society should have the same opportunities to retain and develop their mother-tongue and practice cultural activities" (Prop. 1975:26). With the political decision to support a multilingual and multicultural society, the picture of Sweden as a racially and culturally homogenous country began to change.

In line with the directives issued by Parliament on the subject of immigrant policy, the task of the educational system is to provide immigrants with the same opportunities as Swedish citizens to acquire knowledge and abilities, thus furthering financial and social equality while acknowledging the right of immigrants to retain their own language and culture.

The organization of immigrant teaching varies from district to district and pupil to pupil. At present, children with a mother-tongue other than Swedish may be taught according to one of three, in principle, different models:

- immigrant pupils are taught together with Swedish pupils. The main teaching language is Swedish and mother-tongue instruction is given 2-4 hours a week in place of another subject.
- immigrant pupils are taught in a group of pupils speaking the same language. Most of the teaching is done in the mother-tongue. In 1978, 378 such classes were in operation.
- a group of pupils with the same mother-tongue combine with a group of Swedish pupils to form a class. In this type of class, the immigrant pupils are taught by both a teacher speaking their mother-tongue and a Swedish teacher who also takes care of the Swedish-speaking pupils. At the end of 1978, the number of combined classes totalled 163. The pupils in these classes mostly had Finnish or Serbokroatian as their mother-tongue (SMU 1979:6).

The last-mentioned model is the one used in the Malmö project since 1973 for teaching Finnish children in the lower grades of the comprehensive school.

1.3. The teaching model used in the project: relationship between teaching language, composition of teaching group and time

The majority of teaching models can be described by a three-dimensional figure illustrating the relations between teaching language (L1, L2), composition of teaching group (heterogenous, homogenous), and time (grade). We have discussed elsewhere when, where and how L2 training can be introduced (see Löfgren & Ouvinen-Birgerstam, 1980). By way of introduction, we also mentioned that our guideline was that by grade 4, immigrant children should be able to follow regular teaching in Swedish.

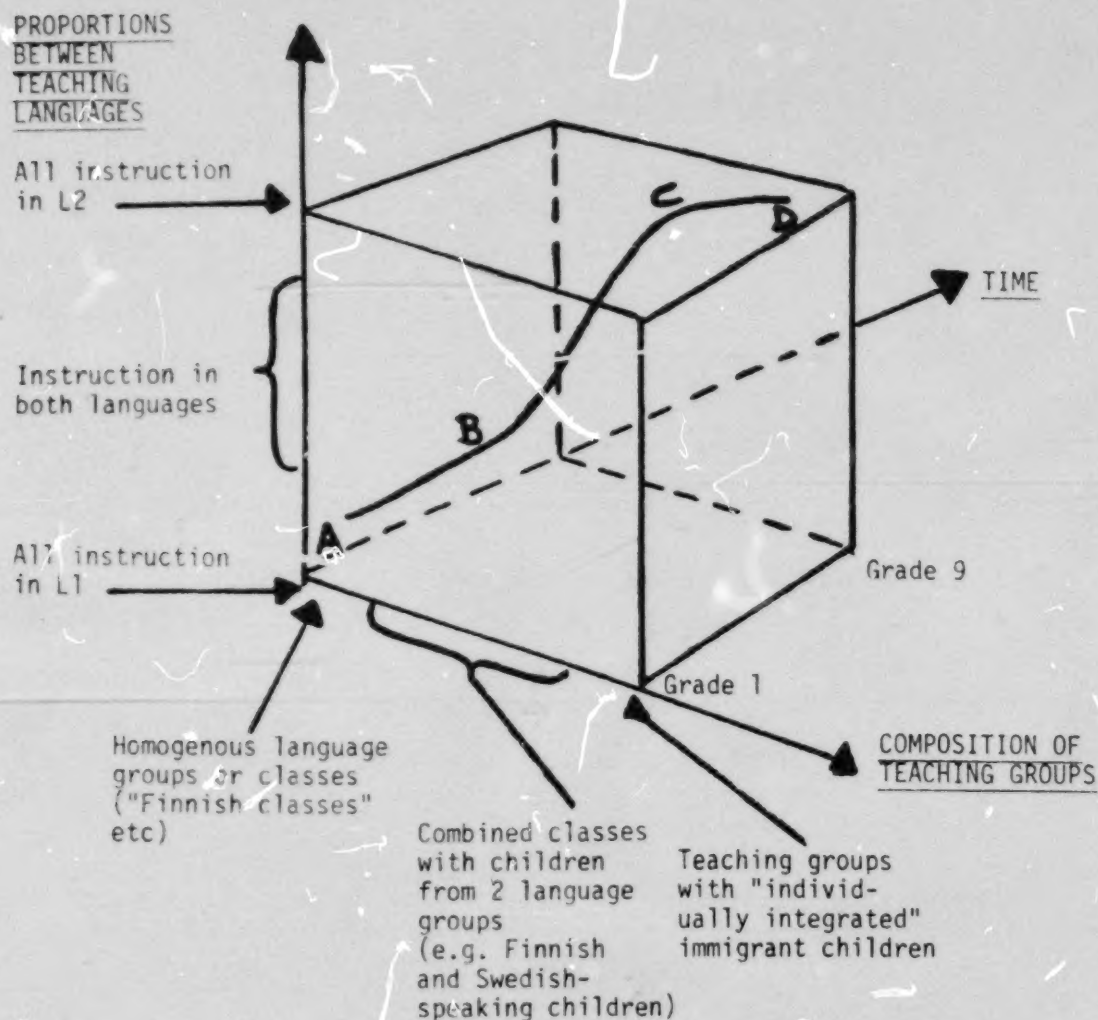


Fig. 1.1. Dimensional description of teaching models illustrating the relations between teaching language, composition of teaching groups and time.

As we worked with a Finnish preschool group, the model studied in the project began at point A (fig. 1.1). Teaching in the preschool group was mainly in Finnish, although a small amount of Swedish was worked into the programme. In the first three grades of the comprehensive school, application of the model entailed teaching in combined classes with instruction in both Finnish and Swedish. Thus we have progressed from point A to point B. From the 4th grade onwards, the immigrant children were taught in Swedish with the possible addition of mother-tongue training, i.e. point C (or even point D). A fuller description of the model employed in the project can be found in section 2.2.

2. DESCRIPTION OF THE INVESTIGATED GROUP AND THE TEACHING MODEL USED IN THE PROJECT

The total group investigated consisted of 4 groups of Finnish children. Finnish families living in the Rosengård area of the city of Malmö were offered free places for their five and six-year-old children in a bilingual preschool programme. Most of the families accepted this offer. Since then, four groups of Finnish children have been followed up continuously in the pre-school and the lower and middle levels of the comprehensive school.

Group 1: born 1966 (from Autumn term 1972-79)

Group 2: born 1967 (from Autumn term 1972-79)

Group 3: born 1968 (from Autumn term 1973-79)

Group 4: born 1969 (from Autumn term 1974-79)

The original number of children in each group was between 11 and 15. In the Spring Term 1979, the youngest group had completed the lower level of the comprehensive school and the oldest group had completed the middle level.

Like other Finnish people in Sweden, the parents of the children in the project had often come to Sweden during a trade boom when workers were needed by Swedish industry. On an average, the families had been in Sweden for 8 years, but there was a considerable variation - from less than one year up to 32 years. Most of the mothers were quite young. Three-quarters of them were between 24-34 years old. The men were somewhat older than their wives. Most of the families had two children. Approximately half the children were of preschool age and almost as many were born in Sweden as in Finland.

Most of the parents (over 60 %) had only 6-8 years of compulsory schooling. Compared to the women, the men more often had learned a trade, whereas the women were more likely to have had a higher theoretical education (usually secondary school). Only two of the parents had graduated from high school.

About half of the parents had had unskilled jobs in Finland. Almost as many had unskilled jobs even in Sweden, although the number employed in industry had increased. In Finland men had been employed as skilled workers (42 %) more often than women (30 %). These men had generally been able to keep their trade when they came to Sweden, whereas only a few women had been able to find qualified jobs.

When the families came to Sweden very few could speak anything but Finnish and only a fifth could make themselves understood in Swedish in simple situations.

The future was uncertain for the majority of the families. A third of them intended to return to Finland, although for many of them the return lay in the distant future. Another third were determined to stay in Sweden for good whereas the remainder had no definite thoughts on the subject.

2.2. The teaching model used in the project

The model used in the project for teaching immigrant children covers the preschool years and the first three years of the comprehensive school.

Most of the Finnish children studied have attended both

- a two-year, Finnish-speaking preschool (3 hours a day)
- bilingual lower school classes (grades 1-3).

After attending the Finnish preschool, all four groups studied in the project started a bilingual lower school. The Finnish children were integrated with two parallel Swedish classes which worked as a team. The last group of children studied, completed grade 3 in the Spring Term 1978.

The parallel classes comprised about 45 children of whom 20-25 were immigrants. The large number of immigrant children is explained by the fact that many immigrant families settle in this part of Malmö. Of the total number of immigrant children 5-15 were Finnish. Thus, about half the pupils were Swedish. The team of teachers consisted of two Swedish class teachers, each responsible for one of the parallel classes, a Finnish teacher responsible for teaching in Finnish and an immigrant teacher^{*)} who taught the immigrant children Swedish. There was also a special teacher for pupils in need of ordinary supportive teaching and mother-tongue teachers for immigrant pupils who spoke a language other than Finnish. The number of teachers available does not deviate from the normal distribution of resources in school. The only change made was that the hours allotted for individual mother-tongue teaching were combined, the Finnish children placed in one group with a Finnish teacher of their own and an extra classroom provided for Finnish lessons.

*) A class has the right to one immigrant teacher period per week and pupil. As about half the pupils in the project classes were immigrants, an immigrant teacher would have almost a full-time job in a teaching team (app. 25 periods a week).

The bilingual teaching model largely means that the Finnish-speaking children who participate in the project, receive their first reading and writing training in Finnish instead of Swedish. In other subjects, the Finnish children are taught together with their Swedish classmates. However, in mathematics and general subjects, the Finnish teacher is present as an assistant for 2 periods per week and subject during the first school-year. The allocation of teaching-periods for the various subjects in the lower level of the comprehensive school is given for the Finnish and Swedish groups respectively in the following table.

Table 2.1. Timetable comparing monolingual and bilingual teaching in grades 1-3.

	Grade 1			Grade 2			Grade 3		
	mono-lingual pupil	bilingual pupil	teaching periods	mono-lingual pupil	bilingual pupil	teaching periods	mono-lingual pupil	bilingual pupil	teaching periods
	Sw	Sw Fi	Finnish teacher	Sw	Sw Fi	Finnish teacher	Sw	Sw Fi	Finnish teacher
SWEDISH	9			11			9	3	
FINNISH		8	8		8(7)**	10		2	4
EXTRA FINNISH			3			5		2	2
EXTRA SWEDISH		1			3(4)**			2	
MATHEMATICS	4	4 (2)*	2	4	4		5	5	
ENGLISH							2	2	
GENERAL SUBJECTS	5	3 2	2	6	4 2	3	7	2 5	5
PHYSICAL EDUCATION	1	1		2	2		3	3	
MUSIC	1	1		1	1		2	1 1	1
CRAFTS							2	2	
TOTAL:	20	$\frac{10 + 10}{20}$	15	24	$\frac{14 + 10}{24}$	18	30	$\frac{20 + 10}{30}$	12

Sw = Swedish Fi = Finnish

*) parallel teaching in Swedish class

**) in the Spring Term one period was transferred from Finnish to extra Swedish

3. RESEARCH INSTRUMENTS

From 1972-1979, data has been collected continuously for the four groups of Finnish children. Thus, the material originates partly from the two-year Finnish preschool and partly from the lower and middle levels of the comprehensive school. Data consists of Finnish and Swedish school and language proficiency tests, teachers observations and ratings, intelligence tests and interviews with the parents of the children.

Table 3.1. Overview of the data collected from 1972-1979.

	Preschool 5 years	Preschool 6 years	Grade 1	Grade 2	Grade 3
Group 1: (Autumn 72 - Spring 79)		n = 11	n = 15	n = 15	n = 12
Group 2: (Autumn 72 - Spring 79)	n = 11	n = 13	n = 5	n = 5	n = 4
Group 3: (Autumn 73 - Spring 79)	n = 14	n = 15	n = 10	n = 10	n = 10
Group 4: (Autumn 74 - Spring 79)	n = 15	n = 16	n = 14	n = 13	n = 8
	40	55	44	43	34
SWEDISH TESTS:					
- Ljungblad (4 subtests)*			(44)		
- DLS (dictation)*			(34)		
- Lindahl (reading test)*			(34)		
- Spring Test 1 and 2 (4 subtests)*			(15)	(43)	
- Standard Test in Mathematics and Swedish*					(34)
- Magnes Mathamtics Test (1-4)*			(44)	(43)	
FINNISH TESTS:					
- Lukila I-II and II-III			(29)	(43)	(34)
- Tasola: vocabulary			(44)	(28)	(34)
- ITPA (5 subtests)	(40)	(55)	(44)	(43)	(34)
OTHER MATERIAL:					
- Raven*	(29)	(13)	(44)		
- Goodenough*	(29)	(44)	(30)	(20)	(12)
- School grades*					(34)
- Teachers' observations (16 variables)	(25)**	(44)**	(44)**	(43)**	(34)**
- Parents interviews					
	November 1974 - February 1975 (50 out of 51 families)				

* Test results are also available for the classmates of the children in the project (Swedish and other nationalities)

** The teachers' observations were made in both Autumn and Spring Terms. The figures here refer to the Spring Term.

4. DEFINING THE ASPECTS TO BE STUDIED

The project sees as its most essential target of study, the results of the bilingual teaching model and, above all, the development of both the Finnish and Swedish languages. Wherever possible, we shall compare the school achievement of the pupils participating in the project with that of other relevant groups of pupils. By school achievement, we mean knowledge and abilities in various school subjects. Finally, we hope to make a contribution to presentday discussions concerning the teaching of immigrant children.

Problem 1. What results have been achieved by using this particular teaching model? How has it affected the school achievement of the Finnish children, especially their Finnish and Swedish language development.

Problem 2. What factors in the children's background are of importance for their success at school?

Problem 3. What relation is there between the investigated children's ability in their own language and their school achievement and general development?

5. RESULTS AND DISCUSSION

5.1. Comparison between the Finnish children's school achievement and that of other relevant groups of pupils

In order to be able to evaluate the effect of the teaching model used in the project and to have grounds for discussing the future possibilities for the Finnish children in the Swedish educational system and on the labour market, their school achievement was compared to that of other relevant groups of pupils.

Comparisons were made with the following groups:

1. The normative groups for the tests
 - 1.1. Finnish children in Finland
 - 1.2. Swedish children in Sweden
2. Finnish immigrant children in Sweden

3. Classmates

3.1. Swedish pupils

3.2. Immigrant pupils other than Finnish

4. Children from the same housing area

4.1. Swedish children

4.2. Children with a mother-tongue other than Swedish

5.1.1. The school achievement of the children in the project compared with the normative groups for the tests

The first comparison made, is with the normative groups for the tests. Here, we compare the results of the children in the project with those of Finnish children in Finland and Swedish children in Sweden.

The Finnish tests are constructed for and standardized on monolingual Finnish children in Finland. Similarly, the Swedish tests are intended for Swedish children in Sweden. It should be noted that the tests were standardized on children placed in ordinary school classes.

Table 5.1. The Finnish ability of the project children as compared to the normative groups for the tests.

Grade:	Test:	Project children			Children in Finland	
		n	m	s	m	s
Grade 1	ITPA (5 sub-tests)	43	30,8	4,9	36,0	6
	Tasola - vocabulary	43	2,3	1,0	3,0	1,0
	Lukila (3 sub-tests)	25-29	6,2	1,2	7,0	1,3
Grade 2	ITPA (5 sub-tests)	43	31,0	3,9	36,0	6
	Tasola - vocabulary	28	2,1	0,7	3,0	1,0
	Lukila (3 sub-tests)	40	5,5	1,3	7,0	1,3
Grade 3	ITPA (5 sub-tests)	34	30,3	4,3	36,0	6
	Tasola - vocabulary	33	2,1	0,9	3,0	1,0
	Lukila (3 sub-tests)	32	5,6	1,2	7,0	1,3
(Grade 4)	ITPA (5 sub-tests)	22	32,8	4,5	36,0	6
	Tasola - vocabulary	22	2,0	0,7	3,0	1,0
	Lukila (3 sub-tests)	22	5,9	1,4	7,0	1,3

Table 5.1 shows that, at preschool level and in grades 1-4, the Finnish children in the project have a command of their mother-tongue corresponding roughly to one standard deviation below the mean. This was also the

case at the preschool level. It should be mentioned that the curriculum and timetable differ in Finland and Sweden, making it difficult to compare school achievement in the two countries.

If we follow the project children's level of ability in Finnish from year to year, we see that they remain at the same level in relation to children of the same age in Finland. This is proof that their knowledge of their mother-tongue has continued to develop. Certainly, their ability is, on an average, lower than that of Finnish children in their own country, but development proceeds at a normal pace.

Table 5.2. The Finnish children's school achievement in the lower grades as compared to the test norms.

Swedish:

Grade:	Test:	The Finnish project children			Swedish children in Sweden	
		n	m	s	m	s
Grade 1	Ljungblad - vocabulary	28	1,8	1,0	5,0	2,0
	Lindahl - reading aloud	34	34,2	21,7	46,0	18,0
	DLS-dictation	34	2,9	1,0	5,0	2,0
Grade 2	Spring Test 2 (3 sub-tests)	41	3,2	2,2	5,0	2,0
Grade 3	Standard Test (7 sub-tests)	34	1,9	0,9	3,0	1,0

Mathematics:

Grade:	Test:	The Finnish project children			Swedish children in Sweden	
		n	m	s	m	s
Grade 1	Magne 1-2 (2 sub-tests)	44	4,4	1,4	5,0	2,0
Grade 2	Magne 3-4 (2 sub-tests)	41	4,2	1,5	5,0	2,0
Grade 3	Standard Test (3 sub-tests)	32	2,6	1,0	3,0	1,0

n = number of children

m = mean

s = standard deviation

It is clear from table 5.2 that the Finnish children in the project are somewhat less competent in Swedish than Swedish children of the same age. It should be remembered that the Finnish children were taught to read and

write in their own language and thus have had less teaching in Swedish than their classmates.

In mathematics, the Finnish children lie slightly below the level of the normative Swedish group. It makes no difference to the results of the mathematics test, which language the project children are tested in.

5.1.2. Comparison between the investigated Finnish children and other Finnish immigrant children in Sweden

There are certain limited possibilities of comparing the achievements of the Finnish children in the project with those of other Finnish immigrant children. Lasonen (1978) investigated the school ability of Finnish immigrant children in the lower grades. He studied the test results of Finnish children who had been placed in Finnish and Swedish classes respectively. These results can be compared with the Finnish and mathematics results of the children in the project. Unfortunately, Lasonen did not test the Finnish children's ability to use the Swedish language.

According to the ITPA test, the children in the project have a somewhat better command of their mother-tongue in grades 1 and 2 than other immigrant children in Sweden, including those placed in Finnish classes. This may be an effect of the training in Finnish which the project children received in the two-year Finnish preschool. In grade 3, ability in Finnish appears to be similar for the project children who were taught in both Finnish and Swedish as for children taught in their mother-tongue in Finnish classes. In contrast, Finnish children who had been taught exclusively in Swedish, had poorer results in every sub-test than the children who had been taught in Finnish. The gap in ability level can be most clearly seen in the sub-test "grammatical closure" which measures knowledge of Finnish grammar, i.e. the basic structure of the language. The project children had most difficulty with sub-tests requiring a good vocabulary e.g. auditory closure, auditory reception and auditory association.

According to the results of the Lukila test, the Finnish children who were taught to read and write in their first language (i.e. the project children) and children who have attended Finnish classes appear to have much the same command of Finnish vocabulary, reading and writing, whereas children who have not received any instruction in their first language, i.e. children who have attended Swedish-speaking classes, perform less well in these respects. Judging by the Lukila tests, mathematics proficiency is more similar in the three groups than language proficiency.

Table 5.3. Finnish immigrant children's proficiency in their mother-tongue according to the ITPA-test - a comparison between different teaching models.

		1		2		3		
Teaching model Grade/ test	Pupils in Finnish classes in Sweden*		Finnish pupils in Swedish classes*		Finnish pupils in the project			
	m	s	m	s	m	s		p<0,01
Grade 1:								
Auditory reception	26.2	5.97			27.2	6.23		-
Grammatical closure	28.3	8.27			29.4	8.56		-
Verbal expression	29.1	5.37			35.1	4.37		1-3
Auditory association	26.0	6.69			29.5	5.76		1-3
Auditory closure	-	-			32.4	7.57		
	n = 120				n = 43			
Grade 2:								
Auditory reception	25.2	7.41	23.0	8.41	28.1	7.31		-
Grammatical closure	27.1	8.17	17.9	10.49	31.7	6.68		1-2-3
Verbal expression	27.4	4.25	27.3	4.27	32.7	3.96		3-1,2
Auditory association	26.0	5.87	19.7	7.39	28.6	5.32		1-2-3
Auditory closure	-	-	-	-	33.6	4.38		
	n = 109		n = 32		n = 43			
Grade 3:								
Auditory reception	29.2	8.68	22.8	9.61	25.8	7.93		2-1,3
Grammatical closure	31.6	7.81	18.2	9.67	32.1	6.84		2-1,3
Verbal expression	31.8	4.76	27.8	3.78	32.4	3.81		2-1,3
Auditory association	29.6	7.11	21.8	7.82	27.3	4.97		2-1,3
Auditory closure	-	-	-	-	33.9	4.40		
	n = 88		n = 21		n = 34			

* According to Lasonen (1978, p. 74 and p. 85). Differences in group means have been tested by means of the t-test. Results significant at the $p \leq 0,01$ level are marked in the table (ex. 1 2 3 - all three groups differ significantly)

Table 5.4. The school-achievement of Finnish immigrant children according to the Lukila-test - comparison between different teaching models.

Teaching model Grade/ test	1		2		3		p ≤ 0,01
	Pupils in Finnish classes in Sweden ⁺		Finnish pupils in Swedish classes ⁺		Finnish pupils in the project		
	m	s	m	s	m	s	
Grade 1:							
Vocabulary	5.4	1.06			5.6	1.27	-
Reading test	-	-			6.8	1.27	
Dictation	5.8	1.36			5.9	1.16	-
Mechanical arithmetic	5.9	1.30			5.8	1.09	-
Arithmetical problems	5.7	1.22			5.9	0.94	-
	n = 101-120				n = 29 ^{o)}		
Grade 2:							
Vocabulary	4.9	0.93	4.3	0.45	4.9	1.12	-
Reading test result	6.1	1.33	5.4	0.84	6.6	1.34	2-1,3
Reading test speed	6.2	1.44	6.4	1.28	-	-	-
Dictation	5.9	1.64	4.1	0.55	5.6	1.39	2-1,3
Mechanical arithmetic	5.6	1.38	5.3	1.42	6.1	1.34	-
Arithmetical problems	5.9	1.33	5.2	1.13	6.0	1.40	-
	n = 92-114		n = 12-32		n = 41		
Grade 3:							
Vocabulary	5.0	1.29	4.0	0.00	4.9	1.01	2-1,3
Reading test result	6.5	1.42	5.8	0.84	6.7	1.21	2-1,3
Reading test speed	6.2	1.23	6.2	0.45	-	-	-
Dictation	6.2	1.56	4.2	0.45	5.7	1.25	2-1,3
Mechanical arithmetic	5.7	1.29	5.7	0.73	6.9	1.22	3-1,2
Arithmetical problems	6.1	1.31	5.9	1.24	6.4	0.91	-
	n = 76-92		n = 4-19		n = 32		

+)According to Lasonen (1978, p. 62 and p. 199). o) No results available from group one.

5.1.3. Comparisons between the school abilities of the children in the project and those of their classmates

Roughly half the pupils in the classes participating in the project were Swedish and half were of foreign origin (children with another-tongue other than Swedish). A varying number of the foreign pupils were Finnish. These pupils were taught in both Finnish and Swedish according to the model studied by the project. The remainder of the foreign pupils were taught in Swedish together with their Swedish classmates.

Table 5.5. Grade by grade comparison of the school achievement of different groups of pupils in the project classes.

Swedish							
Grade:	Test:	Finnish pupils		Other immigrants		Swedish pupils	
		n	m	n	m	n	m
Grade 1	Lindahl - reading aloud	34	34.2	26	37.6	50	50.3
	DLS-dictation	34	2.9	26	4.9	50	6.4
Grade 2	Spring-Test 2(3 sub-tests)	41	3.2	36	3.5	58	4.3
Grade 3	Standardtest in Swedish (7 sub-tests)	34	1.9	46	1.9	55	2.3

Mathematics

Grade:	Test:	Finnish pupils		Other immigrants		Swedish pupils	
		n	m	n	m	n	m
Grade 1	Magne 1-2 (2 sub-tests)	42	4.5	41	4.0	67	4.4
Grade 2	Magne 3-4 (2 sub-tests)	39	4.2	37	3.8	59	4.5
Grade 3	Standard test in mathematics (3 sub-tests)	32	2.5	29	2.2	33	2.4

School grades (gr. 3)

Subject	Finnish pupils		Other immigrants	Swedish pupils
	m	s	m	m
Swedish	2.7	0.9	2.4	2.9
Mathematics	2.9	0.9	2.7	2.8
Music	3.1	1.0	2.7	3.0
Physical Education	3.4	0.8	3.0	3.0
General Subjects	3.1	1.0	2.5	3.1
Mother-tongue	3.3	1.0	3.5	
	n = 32		n = 46-49	n = 62

Table 5.5. shows that the Finnish children have somewhat lower results in Swedish than their classmates. In grades 2 and 3, their results are on a level with those of other immigrant children who have been taught in Swedish. The Swedish children are not outstandingly better in Swedish than their foreign classmates. School achievement, as measured by grades and the results of the mathematics test, is comparable for both Finnish and Swedish pupils. The other foreign pupils have somewhat poorer results.

5.1.4. Comparison of the school achievement of children from the same housing area.

The group of children from the same housing area consists of children of the same age who were placed in other classes or schools, but who lived in the same district. The group consists partly of Swedish children and partly of children with a mother-tongue other than Swedish (Finnish children included).

Table 5.6. Standard Test results in grade 3 from classes in neighbouring schools 1976, 1978 and 1979.

Standard Test in Swedish (grade 3):						
	Entire class		Foreign pupils		Swedish pupils	
	n	mark(m)	n	mark(m)	n	mark(m)
1976 (10 classes)	233	2.0	73	1.7	160	2.2
1978 (6 classes)	121	1.8	70	1.7	51	1.9
1979 (3 classes)	55	1.9	32	2.0	23	1.9
Standard-Test in mathematics (grade 3):						
	Entire class		Foreign pupils		Swedish pupils	
	n	mark(m)	n	mark(m)	n	mark(m)
1976 (10 classes)	231	2.9	71	1.8	160	2.2
1978 (6 classes)	119	1.9	68	2.0	51	1.8
1979 (3 classes)	54	2.4	30	2.7	24	2.1

As we can see from the results in mathematics and Swedish in the above table, pupils in the Rosengård area do not reach the mean (3) in the Standard tests. Their results are far below the national average irrespective of whether they have Swedish or another language as their mother-tongue.

The most obvious explanation of the results lies in the social background of the pupils. Rosengård is a typically low status housing area, with almost the entire population originating from the lowest social classes. As most immigrant children belong to social group III, this may explain their poor results better than the fact that they belong to an immigrant group with a different mother-tongue.

5.2. Relationship between certain background variables and school achievement.

It is obvious that school achievement is related to the intellectual and emotional capacity of the pupils and to their total life-situation. Parental values and ideas about education can also influence the child's success at school.

The Finnish children studied in the project come from an extremely homogenous environment. Their parents are young and have lived in Sweden for 8-10 years. Approximately two thirds of the parents have only a minimal amount of compulsory schooling. A third of them have learned a trade. Almost all the parents are employed as skilled or unskilled manual workers. However, there may still be certain differences in the background and environment of the pupils which account for the results we have arrived at.

5.2.1. Relationship between information from interviews with parents, intelligence tests and school achievement

In order to study the relationship between the home background of the pupils and their success at school, an analysis of the relation between data from parental interviews and achievement in grade 3 was carried out. The relationship between the results of the first testing with Raven's matrices and school achievement was also studied.

Box 1. Variables selected to study the relationship between parental interviews, intellectual capacity and school achievement

Parental interview

- (F1) Length of mother's stay in Sweden (all the children in the project had been in Sweden for almost the same length of time)
- (F2) Number of siblings
- (F3) One-parent family
- (F4) Parent's social index (composed of mother's education, mother's occupation in Sweden, father's education, father's occupation in Sweden)
- (F5) Parent's proficiency in Swedish (total rating of parents' ability to read, write, understand and speak Swedish)
- (F6) Mother-tongue index (language spoken between parents, between children and parents and between siblings)
- (F7) Child's peer index (only Finnish friends or both Finnish and Swedish friends)
- (F8) Parents social contacts
- (F9) Social activity index (composed of parents' participation in Swedish lessons, how often they read Finnish and Swedish books, leisure-time activities, interest in prospective study-circles and participation in the courses organized by the project)
- (F10) Assimilation index (composed of application for Swedish citizenship, attitude to Swedish, planned return to Finland, frequency of visits to Finland, language used at home, language parents wish the child to speak best, people the family mix with)

Intelligence test

- (B1) Raven's matrices

School achievement in grade 3

- (S1) Standard Test in mathematics
- (S2) Standard Test in Swedish
- (S3) Grade in mother-tongue
- (S4) ITPA
- (S5) Tasola
- (S6) Lukila
- (S7) Teacher's rating: self-confidence
- (S8) Teacher's rating: intellectual maturity

As the correlational analyses in section 5.2. are based on only 35 subjects, the standard error is relatively large and small differences in the correlations

should be interpreted with caution.

Table 5.7. Correlations between selected variables from parental interviews, intellectual capacity and school achievement

	ST Ma	ST SW	Mother-tongue	ITPA	Tasola	Lukila	Self-confidence	Intell. maturity
	S1	S2	S3	S4	S5	S6	S7	S8
F1	-.21	.06	-.02	-.42	-.44	-.27	-.17	-.09
F2	-.03	-.00	-.03	.11	.12	-.01	-.23	-.07
F3	-.06	-.03	.15	.12	.22	.23	.03	-.14
F4	-.03	-.05	-.14	.30	.37	.06	.17	.21
F5	-.12	.10	-.09	-.19	-.19	-.23	.07	.15
F6	-.14	.12	.02	-.17	-.33	-.16	.05	.10
F7	-.30	-.05	-.34	-.26	-.33	-.27	-.09	.00
F8	-.10	.00	-.28	-.07	.01	-.25	.01	.09
F9	-.13	.04	-.06	.09	.05	.07	-.03	.12
F10	.06	-.06	.07	-.09	-.08	-.11	.21	.08
B1	.36	.13	.31	.32	.11	.38	.37	.44

The correlation matrix shows that the length of the mother's stay in Sweden is negatively correlated with the child's results in the three Finnish tests (-.42, -.44 and -.27). It is natural that the longer a family stays in Sweden, the more Swedish-speaking they become (cf. F5 and F6). Thus the child's chances of improving in Finnish continually decline. This would suggest that children whose parents have been longer in Sweden would have poorer results in Finnish in grade 3. This, however, is not the case. One explanation is that the teacher bases her judgement on the child as a whole and not just ability in Finnish. An additional explanation may be that verbal ability (stimulation, motivation) plays an increasingly important part during school years for the development of the mother-tongue. In other words, it is not of vital importance for the child's development of its mother-tongue, that the language be consistently used at home. The child's achievement in Swedish (S2) shows no connection with the length of the mother's stay in Sweden, the parents' proficiency in Swedish or the family's mother-tongue index. The language spoken at home would not appear

to have any influence on Swedish language development. A child with only one parent appears to do better in the Finnish tests, which is in line with the previous results. The number of siblings, on the other hand does not seem to be of any consequence for language achievement.

Even although the socio-economic status of the families was relatively similar, there was still a positive correlation between the parents' social index (F4) and the children's results in the Finnish test. In contrast, there does not appear to be any connection between social index and the results of the Standard Test in Swedish in grade 3. Teachers' ratings of the child's self-confidence and intellectual maturity also show a small but positive correlation with the social index of the parents.

The peer index, i.e. whether the child has only Finnish friends or if he mixes with both Finnish and Swedish children, correlates with several aspects of school achievement. It is not to be wondered at that the child does better in Finnish tests and has a better mark in Finnish when he plays only with Finnish friends. The Standard test in mathematics is also related to the peer index. This is not the case with the Standard Test in Swedish. Even though these results must be interpreted with great caution, there seem to be grounds for concluding that primary language training has positive effects on conceptual and intellectual development. This training does not seem to be an obstacle in the way of learning a second language - in this case Swedish. That primary language training is solely responsible for furthering intellectual development may be questioned in the light of further analyses revealing that families eager to preserve their Finnish identity also had a higher social index and were more actively engaged in the development of their children.

As perhaps could be expected, the parents social activity index (F9) and the assimilation index are not noticeably related to the school achievement of the child. These indices may not be especially well-constructed. On the other hand, the social contacts of the parents show a relationship consistent with the previous ones. The results of the Lukila test and the children's marks in their mother-tongue are better when the family only have Finnish friends.

The Raven intelligence test naturally correlates with school achievement and, to a somewhat lesser degree, with the results of the Standard Test in Swedish and the Tasola test.

In conclusion, we can say that although the investigated group was extremely homogenous, there were still varying relationships between the children's school achievement, their intellectual capacity, parents socio-economic status, the social contacts of the parents and the length of the parents stay in Sweden. One possible interpretation of the results may be that Finnish training has had a positive effect. It has not had a negative effect on the development of the Swedish language.

5.2.2. Prediction of school achievement

In order to see if it would be easier to predict the school achievement of the pupils by using several variables simultaneously, a stepwise multiple regression analysis was carried out. Only variables from the parental interviews and the intelligence test which correlated significantly with school achievement were used as predictors and criterion variables.

Table 5.8. Results of the stepwise multiple regression analysis

Criterion variable	Predictor	Multiple correlation
a)(S1) Standard Test result in mathematics	(B1) Raven's matrices (F7) Child's peer index	.36 .43
b)(S3) Grade in mother-tongue	(F7) Child's peer index (B1) Raven's matrices (F8) Parents' social contacts	.34 .42 .48
c)(S4) ITPA	(F1) Length of mother's stay in Sweden (B1) Raven's matrices (F7) Child's peer index (F4) Parents' social index	.42 .48 .51 .56
d)(S5) Tasola	(F1) Length of mother's stay in Sweden (F7) Child's peer index (F4) Parents' social index (F6) Mother-tongue index	.44 .52 .62 .63
e)(S6) Lukila	(B1) Raven's matrices (F8) Parents' social contacts (F3) One-parent family (F1) Length of mother's stay in Sweden	.38 .47 .52 .57
f)(S7) Teacher rating: self-confidence	(B1) Raven's matrices (F2) Number of siblings	.37 .40
g)(S8) Teacher rating: intellectual maturity	(B1) Raven's matrices (F4) Parents' social index	.42 .45

On the basis of the intelligence test and a few background variables concerning the social situation of the family, about 30% of the variance in the results

of the ITPA, TASOLA and Lukila tests can be predicted. School achievement is negatively correlated with length of stay in Sweden and positively correlated with socio-economic status and the intellectual maturity of the pupil. The more the family associates with other Finnish people in their leisure-time, the better the child's result in the Lukila test and the higher his marks in Finnish. As these relationships are not found in the ITPA and Tasola tests which solely measure language ability, we may ask if the social contacts of the family really influence the basic language proficiency of the child. Perhaps, instead, the positive correlation between school marks in Finnish and the Lukila test mirrors the ease with which the child uses the language. It is less easy to predict school marks in mathematics, self-confidence and intellectual capacity from the selected predictor variables. School achievement in Swedish, other subjects and the personal qualities rated by the teachers could not be predicted.

After adding two Swedish tests from grade 1 and Lindahl's reading test to the predictor variables, a new multiple regression analysis was carried out in order to study the relationship between Swedish language ability and school achievement.

As the number of children for whom complete data was available was now reduced to 20, even more caution must be exercised when interpreting the results. The multiple correlation increased considerably. 60% of the variance - 72% in the case of Finnish - could now be explained. The multiple correlation with the Standard test in Swedish rose from around 0 to .75. One or other of the Swedish tests is consistently ranked first, showing that Swedish language proficiency in grade 1 is a good predictor of Finnish proficiency, mathematics ability and ratings in self-confidence and intellectual maturity.

This does not, however, justify the conclusion that the sooner immigrant children learn Swedish, the more competent they will become in their own language and other school subjects. It is more reasonable to assume that children under certain positive conditions (intellectual stimulation, motivation, parental support) develop more favourably, learn Swedish earlier, are proficient in their own language, have plenty of self-confidence and get on well at school.

5.3. Relationship between language competence, school achievement and teacher ratings

The third problem we sought to investigate was the possible relationship between the project children's proficiency level in Finnish, their school achievement

and their general development. In the discussions for and against the early introduction of L_2 teaching, it has been asserted, among other things, that L_1 teaching ought to be continued while L_2 is being established and developed (Löfgren & Ouvinen-Birgerstam, 1980). This should reduce the risk of partial bilingualism which could be detrimental to development. Although the project was not designed to test this hypothetical assumption, some of the data can give an interesting contribution to these discussions. Further information may be found in the correlational analyses of Finnish language proficiency, teachers' ratings and school achievement.

Table 5.9. Relationship between the results of the ITPA test on different occasions, school achievement, the intelligence test and language/school achievement

	ITPA preschool II	Grade 1	Grade 2	Grade 3	Raven
ITPA preschool II	-				.09
Grade 1	.78	-	.80	.78	.02
Grade 2	.69	.80	-	.84	.17
Grade 3	.62	.78	.84	-	.32
ST Swedish	.11	.48	.51	.55	.22
ST Mathematics	.33	.47	.63	.58	.39
Marks in Swedish	.16	.53	.60	.60	.26
Marks in mathematics	.24	.61	.74	.71	.25
Marks in general subjects	.41	.63	.67	.66	.18
Marks in Finnish	.07	.41	.52	.62	.31

First of all, we can establish the fact that the correlations between the results of the ITPA test on the different test occasions are quite high. This is to be expected. The closer the tests are in time, the higher the correlation. It is interesting to note that there is no relation between proficiency in Finnish (ITPA) and the result of the intelligence test (Raven) despite the tests being given at the same point in time. Later on, however, the intelligence test correlates with the ITPA to the same extent as it correlates with school achievement. It may be remembered that the social contacts of the family were an important influencing factor regarding the Finnish proficiency of children in preschool and in the lower grades of the comprehensive school. Gradually, however, other factors such as intelligence and the socio-economic status of the family become

more and more important for L_1 and L_2 learning. The correlation between ITPA results and school achievement increases with time.

The relationship between preschool ITPA results and school achievement in grade 3 is almost non-existent, although not negative. Thus, early proficiency in Finnish is not related to proficiency in Swedish in grade 3. The correlation between the ITPA and achievement in mathematics and general subjects is positive. The children were taught in two languages at the same time, which may have been beneficial to their cognitive development. Thus, L_1 (Finnish) learning seems to have been a positive experience and, from what we can see in the project, has not hindered the development of L_2 .

Table 5.10. Relationship between the results of the ITPA and the ratings of the Finnish and Swedish teachers of the pupils proficiency in the respective languages

	Teachers' ratings					
	Finnish language comprehension	Swedish language comprehension	Finnish language comprehension	Swedish language comprehension	Finnish language comprehension	Swedish language comprehension
ITPA gr 1	.52	-.30	.50	-.13	.72	-.22
ITPA gr 2	.66	-.08	.65	.14	.72	-.02
ITPA gr 3	.63	-.16	.70	.04	.64	.08

From the above table it can be seen that teachers' ratings of Finnish comprehension are positively correlated with the results of the ITPA test. This is to be expected. What is more interesting, is that Swedish comprehension in grade 1 is negatively correlated with the ITPA results and that in grades 2 and 3 there is no correlation at all. It is understandable that children who come from a completely Finnish-speaking environment have difficulty with the Swedish language at first. However, by grade 3 there is no relationship between the test results in the two languages. In grade 3, there is a fairly high positive correlation (.63) between Finnish language comprehension and the results of the Standard Test in Swedish. The correlation between Finnish comprehension at preschool level and the results of the Standard Test in Swedish is .37. Thus, pupils who have a fairly good knowledge of both languages do better at school.

Table 5.11. Relationship between the Finnish and Swedish teachers ratings of the pupils qualities and the ITPA results on the same occasions

Quality (Fi = Finnish teacher) (Sw = Swedish Teacher)	ITPA results			
	Preschool II	Gr 1	Gr 2	Gr 3
Self-confidence:				
Fi	.44	.30	.40	.17
Sw	-.02	-.02	-.16	.30
Peer adjustment:				
Fi	.11	.22	.39	.18
Sw	-.41	.04	.05	.10
Willingness to speak:				
Fi	.28	-.06	.15	.20
Sw	.19	.02	.17	.24
Powers of concentration:				
Fi	.42	.32	.44	.27
Sw	.07	.42	.57	.49
Intellectual maturity:				
Fi	.37	.33	.55	.60
Sw	.20	.34	.57	.63

From looking at the above correlations, we can conclude that children with good results in the ITPA test are rated high on self-confidence and contact with peers in preschool and grades 1 and 2 by the Finnish teacher. In the eyes of the Swedish teacher a good command of Finnish does not go automatically hand in hand with self-confidence, at least not in Swedish language situations. This does not apply to grade 3. It seems reasonable that children who speak Finnish well, function better in Finnish lessons, thus earning a higher rating in the qualities judged. The same holds true for ratings of the children's powers of concentration and intellectual maturity at the preschool level. Right from grade 1 the Finnish and Swedish teachers' ratings correlate with the ITPA results to the same extent. Cognitive resources are, so to speak, independent of language.

From other analyses not shown here, it would seem that the Swedish teacher rates self-confidence and contact with peers higher if the pupil's comprehension of Swedish is good. Thus, the correlation between Swedish comprehension and self-confidence in grade 1 is .60. The correlation between Swedish comprehension

and the results of the Standard Test in grade 3 is weak but positive (.24). In other words, the child needs to have a good command of Swedish to feel self-confident in Swedish language situations. Thus, in order to feel secure in a bilingual environment, children need to be proficient in both language.

Table 5.12. Relationship between school marks and the personal qualities rated by the Finnish and Swedish teachers in grade 3

Mark Quality	Swedish	Mathematics	General subjects	Mother Tongue
Self-confidence:				
Fi	-.07	.29	.19	.24
Sw	.03	.35	.12	.31
Peer adjustment:				
Fi	.10	.27	.14	.21
Sw	-.14	.02	.05	.16
Willingness to speak:				
Fi	-.19	.21	.10	.12
Sw	.21	.37	.33	.31
Powers of concentration:				
Fi	.32	.51	.43	.37
Sw	.47	.65	.36	.58
Intellectual maturity:				
Fi	.67	.76	.69	.66
Sw	.49	.66	.63	.65

The correlations between marks in grade 3 and ratings of self-confidence, peer adjustment and willingness to speak are rather low. All the significant correlations are positive ones. The most uniform results are those concerning the teacher's rating of willingness to speak Swedish and school marks. Pupils who are most willing to speak Swedish do better at school. That powers of concentration and intellectual maturity should be highly correlated with school achievement is self-evident.

Table 5.13. Relationship between teachers' ratings of language proficiency and school success in grade 3

Teachers ratings	School achievement	Standard Test		Marks			
		Swedish Mathematics		Swedish Mathematics		General Subjects	Mother-Tongue
Choice of language with Finnish friends:							
Fi		.33	.15	.48	.26	.28	.40
Sw		-.05	.15	-.38	-.22	-.32	-.14
Language interference:							
Fi		.34	.23	.48	.44	.47	.45
Sw		.15	-.05	-.20	-.11	-.20	-.07
Language comprehension:							
Fi		.63	.54	.73	.74	.70	.60
Sw		.19	.32	.09	.19	.15	.37
Language production (oral):							
Fi		.67	.61	.76	.78	.74	.73
Sw		.40	.42	.34	.40	.42	.54
Reading competence:							
Fi		.69	.50	.73	.64	.56	.77
Sw		.74	.39	.63	.36	.48	.63
Writing competence:							
Fi		.67	.47	.80	.71	.57	.82
Sw		.59	.29	.77	.50	.51	.69

Children with high school marks almost always prefer to speak Finnish with their classmates during Finnish lessons. On the other hand, they usually choose to speak Swedish with their Finnish friends during Swedish lessons. Thus, clever children choose language according to the situation in which they find themselves.

Children who get on well at school seldom use Swedish words while speaking Finnish. In contrast, they may very well try to use Finnish words in a Swedish language situation. Interference of Finnish in Swedish situations need not

necessarily be a sign of poor language differentiation, but rather an attempt to increase the possibilities of expression.

Language proficiency as rated by both the Finnish and Swedish teachers, is also positively correlated to school achievement. The Finnish teacher's judgement of the pupils' proficiency in spoken Finnish coincides more often with school achievement than does the Swedish teacher's judgement of proficiency in spoken Swedish. Both teachers' rating of reading and writing proficiency are highly correlated to school achievement. Children judged to read and write Finnish well, do better at school. However, this is also true of children judged to read and write Swedish well. As we emphasized earlier (p.) these relations should not be interpreted causally. The child's inborn capabilities and its environment are far more important for language development and school achievement. Proficiency in the spoken language, which here we term language production, is not as important. The variations in the ability to speak Swedish are small, besides which, this ability is probably difficult to estimate. In contrast, the ability to learn to read and write seems to be essential.

6. CONCLUSIONS

The results reported in this article on the language proficiency and school achievement of Finnish immigrant children, and the analyses presented in the final report from the project (Löfgren & Ouvinen-Birgerstam, 1980), prompt us to draw the following conclusions:

- The bilingual teaching-model developed in the project, has increased the possibilities of the Finnish children to become functionally bilingual.
- The child's mother-tongue is not, in itself, a decisive factor for success in the Swedish school.
- Social environment and background, together with the intellectual capabilities of the child are of greater importance than pure language factors for how the child gets on at school.
- Development of proficiency in Swedish is not a direct result of the immigrant child's level of proficiency in its mother-tongue.
- Teaching in the mother-tongue has not had any negative effect on the child's level of proficiency in Swedish.

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